

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 29. (Cancelled)

30. (New) A method performed by a portable device capable of playing media items, the method comprising:

receiving a media item and n-band graphic equalizer setting values associated with the media item from a host device, wherein the host device has greater computational resources than the portable device; and

generating m filters to approximate the n-band graphic equalizer settings, where m is less than n, by:

identifying a plurality of filter patterns in a composite frequency response shape representing the n-band graphic equalizer setting values, each filter pattern corresponding to a predetermined filter type from a set of filter types;

for each identified filter pattern, creating a plurality of filters by creating a filter of the predetermined filter type corresponding to the identified filter pattern;

determining parameters for each of the plurality of filters such that the plurality of filters approximates the composite frequency response shape representing the n-band graphic equalizer setting values;

assigning a priority to each of the plurality of filters; and

limiting the number of the plurality of filters to not more than m based on the priority assigned to each of the plurality of filters.

31. (New) The method of claim 30, wherein the set of filter types comprises a low-shelf filter, a high-shelf filter, and a parametric filter.

32. (New) The method of claim 31, wherein identifying the plurality of filter patterns in the composite frequency response shape representing the n-band graphic equalizer setting values comprises identifying at most one low-shelf filter pattern, at most one high-shelf filter pattern, and one or more parametric filter patterns in the composite frequency response shape representing the n-band graphic equalizer setting values.

33. (New) The method of claim 30, further comprising playing the media item using the not more than m filters.

34. (New) The method of claim 30, further comprising determining that the n-band graphic equalizer setting values associated with the media item have changed.

35. (New) The method of claim 34, further comprising receiving changed n-band graphic equalizer setting values to be associated with the media item from a user interface of the portable media device.

36. (New) The method of claim 35, further comprising associating the changed n-band graphic equalizer setting values with the media item.

37. (New) The method of claim 35, further comprising, in response to receiving the changed n-band graphic equalizer settings, generating a second set of m filters to approximate the changed n-band graphic equalizer settings.

38. (New) The method of claim 37, wherein generating the second set of m filters comprises:

identifying a plurality of filter patterns in a composite frequency response shape representing the changed n -band graphic equalizer setting values, each filter pattern corresponding to a predetermined filter type from the set of filter types;

creating a plurality of filters by, for each identified filter pattern, creating a filter of the predetermined filter type corresponding to the identified filter pattern;

determining parameters for each of the plurality of filters such that the plurality of filters approximates the composite frequency response shape representing the changed n -band graphic equalizer setting values;

assigning a priority to each of the plurality of filters; and

limiting the number of the plurality of filters to not more than m based on the priority assigned to each of the plurality of filters.

39. (New) The method of claim 37, wherein determining that the n -band graphic equalizer setting values associated with the media item have changed and generating the second set of m filters are performed during the playing of the media item.

40. (New) The method as recited in claim 30, wherein the plurality of filters comprise second order recursive filters.

41. (New) A portable media device comprising:

a communications module to receive a media item from a host computer having greater computational resources than the portable media device, and to further receive equalizer setting information from the host computer, the equalizer setting information being associated with the media item;

a data store for storing the media item and the associated equalizer setting information received from the host computer; and

a processor operatively connected to the data store, wherein the processor operates to acquire equalizer setting values based on the equalizer setting information, to approximate the equalizer setting values with a reduced filter order approximation, and to present the media item in accordance with the reduced filter order approximation,

wherein the processor approximates the equalizer setting values with a reduced filter order approximation by:

identifying a plurality of filter patterns in a composite frequency response shape representing the equalizer setting values, each filter pattern corresponding to a predetermined filter type from a set of filter types;

creating a plurality of filters by, for each identified filter pattern, creating a filter of the predetermined filter type corresponding to the identified filter pattern;

determining parameters for each of the plurality of filters such that the plurality of filters approximates the composite frequency response shape representing the equalizer setting values;

assigning a priority to each of the plurality of filters; and

limiting the number of the plurality of filters to not more than a predetermined number allowed by the portable media device based on the priority assigned to each of the plurality of filters.

42. (New) The portable media device of claim 41, further comprising a coder/decoder (CODEC) to receive the presentation of the media item in accordance with the reduced filter order approximation and to generate an analog output signal representing the media item in accordance with the reduced filter order approximation.

43. (New) The portable media device of claim 42, further comprising a speaker coupled to the CODEC, wherein the speaker converts the analog output signal to sound, wherein the sound is substantially similar to sound produced when the media item is played on the host computer in accordance with the equalizer information associated with the media item.

44. (New) The portable media device of claim 41, wherein the equalizer setting information associated with the media item received from the host computer is configured to be used by host computer to present the media item, the equalizer setting information being related to a graphic equalizer requiring greater computational resources than available from the processor of the portable media device for the purpose of implementing a graphic equalizer on the portable device.

45. (New) A computer-readable medium having stored thereon data representing instructions that, when executed by the processor of a portable device capable of playing media items, cause the processor to perform operations comprising:

receiving a media item and n-band graphic equalizer setting values associated with the media item from a host device, wherein the host device has greater computational resources than the portable device; and

generating m filters to approximate the n-band graphic equalizer settings, where m is less than n, by:

identifying a plurality of filter patterns in a composite frequency response shape representing the n-band graphic equalizer setting values, each filter pattern corresponding to a predetermined filter type from a set of filter types;

creating a plurality of filters by, for each identified filter pattern, creating a filter of the predetermined filter type corresponding to the identified filter pattern;

determining parameters for each of the plurality of filters such that the plurality of filters approximates the composite frequency response shape representing the n-band graphic equalizer setting values;

assigning a priority to each of the plurality of filters; and

limiting the number of the plurality of filters to not more than m based on the priority assigned to each of the plurality of filters.

46. (New) The computer-readable medium of claim 45, wherein the set of filter types comprises a low-shelf filter, a high-shelf filter, and a parametric filter.

47. (New) The computer-readable medium of claim 46, wherein the processor identifies the plurality of filter patterns in the composite frequency response shape representing the n-band graphic equalizer setting values by identifying at most one low-shelf filter pattern, at most one high-shelf filter pattern, and one or more parametric filter patterns in the composite frequency response shape representing the n-band graphic equalizer setting values.

48. (New) The computer-readable medium of claim 45, further comprising playing the media item using the not more than m filters.

49. (New) The computer-readable medium of claim 48, wherein the instructions further cause the processor to determine that the n-band graphic equalizer setting values associated with the media item have changed and receiving changed n-band graphic equalizer setting values to be associated with the media item from a user interface of the portable media device from a user interface of the portable media device.

50. (New) The computer-readable medium of claim 49, wherein the instructions further cause the processor to associate the changed n-band graphic equalizer setting values with the media item.

51. (New) The computer-readable medium of claim 50, wherein the instructions further cause the processor to, in response to receiving the changed n-band graphic equalizer settings, generate a second set of m filters to approximate the changed n-band graphic equalizer settings.

52. (New) The computer-readable medium of claim 51, wherein determining that the n-band graphic equalizer setting values associated with the media item have changed and generating the second set of m filters are performed during the playing of the media item.

53. (New) The computer-readable medium as recited in claim 45, wherein the plurality of filters comprise second order recursive filters.